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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/253,245 | 02/19/1999 | GARY ALLAN HARPELL | 30-4496 | 5377 |

7590 08/02/2002
VIRGINIA S ANDREWS
ALLIEDSIGNAL INC
P O BOX 31
PETERSBURG, VA 23804

EXAMINER

COLE, ELIZABETH M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1771

DATE MAILED: 08/02/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|--------------------------------------|--|---------------------------------------|--|
| Office Action Summary | Application No. 09/253,245 | | Applicant(s) HARPELL ET AL. | |
| | Examiner Elizabeth M Cole | | Art Unit 1771 | |
| | | | | |

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 23 May 2002.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-17 and 19-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-17 and 19-23 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____ |
|--|--|

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/23/02 has been entered.

2. Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 7-8 recite "molecular weight" with regard to polyethylene. This renders these claims indefinite because it is not clear whether this is referring to weight average or number average molecular weight.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-17, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schirtzinger, U.S. Patent No. 3,686,048 in view of WO 91/08895 to Li et al. Schirtzinger discloses a material as set forth above. Schirtzinger differs from the claimed material because Schirtzinger et al does not teach the other types of fibers claimed and because Schirtzinger does not teach the claimed ratio of matrix to fibers or the size of the matrix islands. With regard to the types of fibers, Li et al teaches that fibers such as high molecular weight polyethylene, high molecular weight polypropylene and aramid fibers are equivalent to glass fibers for preparing composite materials. Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to have employed fibers such as high molecular weight polyethylene or polypropylene or aramid fibers instead of the glass fibers in the material of Schirtzinger. One of ordinary skill in the art would have been motivated to employ the fibers of Li in the material of Schirtzinger since the fibers are taught as being useful in forming composite materials. Since Li teaches the same fibers as the claimed fibers, the fibers of Li would inherently possess the claimed properties such as tenacity and modulus. With regard to the amount of resin employed, although Schirtzinger does not specify the amount, Schirtzinger clearly teaches that enough resin should be used to form a strong fiber array without employing excess resin which would prevent the passage of the resin which is used to form the composite material from fully penetrating the fiber array. See col. 4, lines 23-56. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the amount of resin employed to form the resin bridges through the process of routine experimentation so that an optimum amount of resin was used which allowed for both the formation of a strong array of fibers and the fully impregnation of the fiber array with the resin used to make the composite material.

5. The Declaration under 37 CFR 1.132 filed 5/23/02 is insufficient to overcome the rejection of claims 7-8 based upon 112 2nd paragraph as set forth in the last Office action because: although the Declaration asserts that number average molecular weights cannot be measured for polyethylenes in the “ultra-high molecular weight” category and that it violates standard terminology in the area to refer to such polymers as having a number average molecular weight, the term number average molecular weight is used for polyethylenes in the ultra-high molecular weight category, as shown by U.S. Patent No. 5,558,448 to Yabe et al, (see col. 3, lines 31-42) and U.S. Patent No. 6,202,726 to Corvasce et al, (see 2, lines 55-62). Therefore, this

grounds of rejection has been maintained.

6. Applicant's arguments filed 5/23/01 have been fully considered but they are not persuasive.


With regard to the art rejection, Applicant argues that both Schirtzinger and Li teach fully impregnating the fibrous structure with a resin, which would teach away from the claimed invention. However, this argument is not persuasive because Schirtzinger teaches forming the claimed material, i.e., a plurality of fibers which are separated by "minute" resin bridges. That Schirtzinger contemplates impregnating this structure with resin does teach away from the claimed invention because Schirtzinger clearly teaches the intermediate structure which comprises the resin bridges and parallel fibers and the claims of that patent are drawn to a method of making that structure, not an impregnated structure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (703) 308-0037. The examiner may be reached between 6:30 AM and 5:00 PM Monday through Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (703) 308-2414.

Inquiries of a general nature may be directed to the Group Receptionist whose telephone number is (703) 308-0661.

The fax number for official faxes is (703) 872-9310. The fax number for official after final faxes is (703) 872-9311. The fax number for unofficial faxes is (703) 305-5436.


Elizabeth M. Cole
Primary Examiner
Art Unit 1771

e.m.c
July 30, 2002